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*Report from Rio de Janeiro—Status of plague.*RIO DE JANEIRO, BRAZIL, *October 5, 1900.*

SIR: As already shown in my previous reports the plague is declining. On September 19 and the following days there were no new cases observed. Therefore on the 25th of that month I sent you a telegram informing you of this. Unfortunately however on the 29th new cases were reported; this destroyed the hope that the plague had ended. On October 3, I sent you telegraphic notice of the new cases.

The progress of the plague during the last month is shown by the following statement, referred in the same manner as in my previous reports:

Date.	New cases.	Deaths at—		Cured.	Number of patients in hospital.	Date.	New cases.	Deaths at—		Cured.	Number of patients in hospital.
		Hos-pital.	Resi-dences.					Hos-pital.	Resi-dences.		
Sept. 13...		1			60	Sept. 22...				2	43
Sept. 14...	2		1	12	61	Sept. 23...					43
Sept. 15...	2	1			50	Sept. 24...					43
Sept. 16...	1	1			51	Sept. 25...					43
Sept. 17...	2				53	Sept. 26...					43
Sept. 18...	2	1	1		53	Sept. 27...				2	41
Sept. 19...	1	1		5	48	Sept. 28...					41
Sept. 20...					48	Sept. 29...	2			11	32
Sept. 21...				3	45	Sept. 30...	1	1			32

During September there have been 29 cases and 16 deaths; 12 patients died in the hospital and 4 at their residences or during the transport; 48 patients were cured and 32 remained still in treatment.

In view of the decline in the plague, the sanitary requirements now in force are less burdensome. It is only necessary that vessels leaving Rio de Janeiro for ports on the coast should proceed to the quarantine station at Ilha Grande to be there disinfected.

General state of health.

The general state of health at Rio de Janeiro is pretty fair. The only danger at the present time (beside the plague) is that of smallpox for unvaccinated persons. The disease has spread in the city and in some other localities, as is usual at this season.

Bills of health.

Since last report the following-named ships have been inspected and received bills of health of this office: September 25, steamship *Herschel*, British, for New York; bark *Madonna del Orto*, Italian, for Pensacola; bark *Nova Lide*, Portuguese, for New Orleans. September 27, steamship *Pretoria*, British, for New Orleans. October 1, schooner *Scottish Isles*, British, for Portland, Oreg. October 2, steamship *Eastern Prince*, British, for New York. October 4, steamship *Buffon*, British, for New York.

Respectfully,

W. HAVELBURG, M. D.,

Acting Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,

*U. S. Marine-Hospital Service.**Report from Rio de Janeiro—Treatment of plague by early extirpation of the infected lymphatic glands.*RIO DE JANEIRO, BRAZIL, *October 18, 1900.*

SIR: During the fortnight, September 16 to 30, the total number of deaths from all causes was 505, an increase of 7 as compared with

the preceding fortnight, being at the rate of 33.66 per diem and corresponding to an annual death rate of 15.77 per cent, against 33.2 and 15.55 during the foregoing period.

The number of deaths in regard to infectious and contagious diseases was as follows: Tuberculosis, 103, against 101; smallpox, 33, against 24; malarious fever, 31, against 28; bubonic plague, 5, against 11 (not 13); beriberi, 5, against 3; typhoid fever, 5, against 2; measles, 3, against 1; yellow fever, 2, against 3; influenza, 2, the same as before; diphtheria, 0, against 1, and dysentery, 0, against 2.

There were 539 births; that is an average of 35.43 per diem, corresponding to an annual birthrate of 16.83 per cent.

According to meteorological observations, the thermometer varied as follows: 28.9° C., maximum; 16.8° C., minimum; medium, 20.65° C.

Plague.

The progress of the plague was as follows:

Date.	New cases.	Deaths at—		Cured.	Number of patients in hospital.	Date.	New cases.	Deaths at—		Cured.	Number of patients in hospital.
		Hos-pital.	Resi-dence.					Hos-pital.	Resi-dence.		
Oct. 1.....	1	1	.....	.....	32	Oct. 9.....	2	.....	.....	.....	27
Oct. 2.....	1	.....	.....	.....	33	Oct. 10.....	.....	.....	.....	7	20
Oct. 3.....	1	4	.....	.....	30	Oct. 11.....	.....	.....	.....	.....	22
Oct. 4.....	1	.....	1	.....	30	Oct. 12.....	2	1	.....	.....	23
Oct. 5.....	1	.....	.....	.....	31	Oct. 13.....	2	.....	.....	2	23
Oct. 6.....	1	.....	1	.....	31	Oct. 14.....	.....	.....	.....	.....	23
Oct. 7.....	1	1	1	.....	30	Oct. 15.....	1	1	.....	.....	23
Oct. 8.....	.....	.....	.....	5	25						

Plague treatment.

The observation on the plague at Rio de Janeiro has produced some interesting results, observed chiefly by Dr. Terni, professor at Messina, who spent some months here with the purpose of observing the plague.

In the greater part of the cases the entrance of the plague bacillus is by way of the skin. It is shown by histological examination that the bacillus floats from the skin through the lymphatic vessels, but it settles neither in the skin nor in the small or large lymphatic vessels—it shows then characteristics very different from those shown by the erysipelas germ, etc. The plague bacillus remains suspended in the lymph, but it is only in the lymphatic glands that the germ settles, develops, and produces its toxin. Should it occur that the reactive inflammation of the lymphatic glands, by producing pus, checks the development of the germs, then the plague is localized. If the reactive inflammation of the lymphatic glands is not sufficient to check the development of the plague germs, then later the toxin produced, together with the corpuscular substances of the bacilli themselves, may enter into the circulation and thus produce a general infection.

From the theory thus established there results an important therapeutic question. During the progress of the disease there is a critical period in which the germ is to be found only in the lymphatic glands, a natural protective rampart, which, up to that time, had not been broken through. If the germs succeed in breaking through the rampart, then the consequences of a septicæmic infection by the plague bacillus are indeterminable.

Therefore the therapeutic indication is to seize upon the important period for the purpose of checking the progress of the disease by extir-

pation of the infected glands. This therapeutic measure, that has been also executed by other physicians for plague treatment, was employed at the isolation hospital of this place, and the impression of the physicians is that this surgical measure has been shortly followed by improvement. In fact, there is shown in the march of the temperature a descent of the curve. We may be permitted to suppose that the fever is an expression of the toxic infection, and that in consequence of removing the focus which produces the toxin, the decline of a high temperature may be explained.

A microscopical examination of the extirpated glands shows that the bacillar infection proceeds gradually from the central to the external parts, and this also favors the theory that a precautionary extirpation of the glands may check the disease before the infection becomes general. Therefore, the plague disease may be divided in two periods—(a) of the local, (b) of the general infection. The more or less rapid passage from the first to the second period varies very much in the respective cases.

In the majority of cases the form of infection requires the extirpation of the inguinal glands; in other cases the axillary glands must be extirpated; in still others the cervical glands, etc. In many cases the glands in different parts of the body should be removed.

From the nature of the cause it is evident that such surgical treatment of the plague can not be applied to the pneumonic or intestinal form of plague; the thoracic or abdominal glands are not within reach.

The surgical operation by itself does not offer much difficulty. For the most part there are the superficial glands that are all attacked. Over the enlarged glands an incision is made, the glands are enucleated bluntly with the fingers; the bleeding arteries are ligated and the veins are cut through between forceps, so that the operation can be executed with little loss of blood. With the application of chloride of ethyl, cocaine, etc., the pains caused by operation may be greatly diminished.

As already has been said, the impression of the physicians is, that by the surgical treatment of the plague the therapeutic results have been better than before. I hope that in a short time the total results of this treatment and that with serum etc., will be published, and then I shall have occasion to return to the question. I shall report on that occasion also in regard to the experiments made with the prophylactic vaccination after Terni's method.

Bills of health.

Since last report the following named ships have been inspected and received bills of health of this office:

October 6, schooner *Lika*, German, for Portland, Oreg. October 7, steamship *Glendevon*, British, for New Orleans; steamship *Laurak Bat*, Spanish, for New Orleans. October 11, bark *Grace Deering*, American, for Portland, Me.; steamship *York*, British, for New Orleans. October 16, schooner *Clackmannanshire*, British, for New York. October 17, *Coleridge*, British, for New York.

Respectfully,

W. HAVELBURG, M. D.,

Acting Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,

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